



# **EDGEWOOD**

## **CHEMICAL BIOLOGICAL CENTER**

U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND

**ECBC-TR-369**

### **ADASHI: USER SURVEY AND FOCUS GROUP PROCESS WITH FINAL RESULTS**

**Genna L. Buckless**

**ADVANCED PLANNING AND INITIATIVES DIRECTORATE**

**James A. Genovese**

**ENGINEERING DIRECTORATE**

**June 2004**

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**ABERDEEN PROVING GROUND, MD 21010-5424**

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## PREFACE

The work described in this report was started in November 2002 and completed in October 2003.

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## Acknowledgments

The process for assessing ADASHI was supported by the Decision Analysis Team (DAT).

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## ADASHI: USER SURVEY AND FOCUS GROUP PROCESS WITH FINAL RESULTS

### 1. BACKGROUND

A Patent Licensing Agreement (PLA) and a Cooperative Research and Development Agreement (CRADA) have been negotiated with Optimetrics Inc. (Bel Air, MD) who is the co-developer of this prototype software tool with Edgewood Chemical Biological Center (ECBC). ADASHI has been under development for the past 4 years, and will tentatively be released in December 2004.

Automated Decision-Aid System for Hazardous Incidents (ADASHI) will be a software tool for incident commanders and response teams at CB incidents to aid in the decision-making process as a response template for guiding the actions of responders, and also used as a tool for training and planning. The ADASHI tool is expected to significantly improve response to hazardous materials events.

The purpose of the user survey is to determine what the ADASHI tool should look like and how it should work. The areas of interest for the survey include the following: ease of use, "value added", areas of improvement, and needed features/functions. The results of the survey will be used for adjustments to the model before its release.

### 2. PROCESS FOR ASSESSING ADASHI

The process for assessing ADASHI was conducted by James Genovese and supported by the Decision Analysis Team (DAT). The assessment process was conducted in several stages, as listed and described below:

- User Survey Development
- User Feedback Compilation
- Focus Group Assessment
- Summary of Results

#### 2.1 User Survey Development.

The survey was sent to a variety of emergency responders including incident managers, police department, fire department, emergency medical service, and hazardous material teams. Homeland Defense responders at the federal (military and civilian) level were also included.

The survey consisted of 16 questions. Questions required open and close-ended responses. Open-ended responses are not limited to any structure; they are otherwise known as "free response". This type of response accompanied questions

like "please explain" or "please provide comments". Close-ended responses were limited to the response choices given (e.g., YES/NO, rate from 1-5). Participants were required to review a demo of the ADASHI software and to view 10 screen captures from ADASHI for the survey.

Options for the most appropriate survey mode for providing an efficient means of deriving results were discussed. The decision was made to create a web-based survey through the web-survey service SurveyMonkey.com LLC<sup>®</sup>. SurveyMonkey.com LLC<sup>®</sup> provides a template for the creation of a survey that is controlled by an administrator and is then accessed by invited participants. The administrator is provided with alternative color templates, question styles, and analysis options.

The DAT developed a web-based survey located in Appendix A. The initial intent was to send the spreadsheet survey to a small group of responders no larger than 30 people. As responders were contacted to solicit involvement, more people became interested in ADASHI and wanted to test the demo as well as provide their feedback. The final count of potential participants was almost 400 people worldwide; the spreadsheet version was deemed inadequate.

To take the survey, participants needed to access the ADASHI Demo, as well as information on how to access the survey and supporting documents. An initial target set of 150 participants was sent a mini disc of the ADASHI Demo, along with a letter of introduction describing how to access the survey and other supporting documents; the remaining requests were handled via email and the web.

A website was created by the ECBC DAT and the RDECOM Web Design team. The ADASHI website is located on RDECOM Online under the Homeland Defense Business Unit. The purpose of the website was to provide all of the supporting documents online along with the ADASHI Demo and the link to the survey; it has also provided a means of making information easily available to those whose inquire about ADASHI.

The documents on the website included a welcome letter (with a link to the online ADASHI Demo), directions on how to complete the survey, the ADASHI demo, screen captures of ADASHI for the survey, and the survey link. A screen-capture example of the plotting capability of the Automated Emergency Response Guide (ERG) was also included in the web-based survey package. All of the survey documents are located in Appendix A except for the ADASHI Demo and the spreadsheet version of the survey.

A complimentary Automated ERG software tool, which has the current ERG digitized such that automatic plotting of isolation and exclusion zones can be overlaid on to GIS mapping grids, was offered as an incentive. Respondents who completed the survey and provided contact information received this tool.

## 2.2 User Feedback Compilation.

The ability to produce a comprehensive analysis of the responses was the most important feature for this survey. The number of participants had to be tracked along with the number of questions answered/skipped. The final results were required to be broken down by basic statistics (i.e. average rating in a scaled question, percentage of a specific close-ended response in one question). The comments, in the form of raw data, from the open-ended questions also had to be compiled in an organized format.

SurveyMonkey.com LLC<sup>®</sup> allows for several raw data spreadsheet outputs; the outputs broke the responses and questions down into different levels of detail. This was integral to the process considering the complex nature of some of the questions asked and the detail needed from the responses.

The DAT compiled the survey data according to question, sub-question, and open/close-ended responses into a user-friendly table. The responses were reviewed to identify commonalities; those commonalities were summarized into a "Highlights" document.

This survey and the responses will be treated as confidential and individual responses will not be shared or distributed to others; however, the data will be used as a "user snapshot" of what the response community needs. Summary results will be provided upon request.

## 2.3 Focus Group Assessment.

The purpose of the focus group meeting was to discuss and review the responses from the survey and to gain additional input regarding needed changes/additions to ADASHI. The focus group meeting was conducted on 10 July 2003 at the Edgewood Area of Aberdeen Proving Ground.

The focus group included a selected blue-ribbon panel (BRP) of emergency responders from hazardous material teams, and military personnel, who provide the same technical response functions for installation protection, and homeland security. The developers and the DAT were also in attendance (see the Table).

The DAT first discussed background information about the development of the survey with the focus group. Following this, the DAT presented the survey questions and results summarized in the "Highlights" document; the results were presented in both numerical and narrative form. Accompanying this document was a spreadsheet with each individual response. The DAT facilitated the discussion and feedback from the BRP panel. All of the comments were documented by the DAT within the "Highlights" document.

Table. BRP Members and Attendees

<b><u>Blue Ribbon Panel Member</u></b>	<b><u>Agency</u></b>
Mr. Craig Black	Hazardous Materials Coordinator-Prince George's County Fire/EMS Dept.
Mr. Duane Caneva	Chemical Biological Incident Response Force- United States Marine Corps
Sgt. Mike Holden	Technical Escort Unit
Dr. Beverly Maliner	US Army Medical Research Institute for Chemical
Dr. Pat Nolan	Hazardous Materials Specialist
Mr. Sam C Pitts	Chemical Biological Incident Response Force- United States Marine Corps
Major Thomas Thompson	Technical Escort Unit
<b><u>Blue Ribbon Panel Attendees</u></b>	
Mrs. Genna Lee Buckless	Decision Analysis Team - ECBC
Mr. Jim Genovese	Homeland Defense Business Unit - ECBC
Mr. Alex Menkes	Optimetrics
Mr. Art Stuempfle	Optimetrics

#### 2.4 Summary of Results.

The raw data represents the individual responses of the responder community as a whole; responders including incident managers, police department, fire department, emergency medical service, and hazardous material teams. The raw data comments are located in Appendix B. The "Highlights" document (Appendix C) contains the summarized data from the survey for each open and close-ended response and the feedback from the BRP. The "Highlights" document contained suggestions for changes and/or improvements to the ADASHI tool.

The BRP provided numerous comments and concerns regarding further development and funding. In reference to current on-hand capabilities (i.e., the computer models and other responder equipment), they recommended a one-plume modeling system be created to maintain consistency among the users. They also stated that interoperability is a very important feature; ADASHI should be "plug'n'play" ready with different devices (e.g., HPAC, COBRA).

Integration of real-world data into ADASHI is vital to the user. This is data that could be available about the incident cite before an incident, data gathered at the time of an incident, or physiological data. There are many different features that the BRP would like to see that reflect real-world data, such as the level of hazard, risk and protection factor, humidity level, work/rest cycles, and heat index calculator. They would like to have data about the present population in a location with respect to certain events or holidays, as well as the capability of accessing blueprints of the building that has to be accessed. Better granularity will be obtained through the integration of operational scenarios and physiology data.

Another area of concern is the mode of communication and collection of data at the incident site. The BRP agreed the responders should have internet-based communication. They suggested an icon driven screen when a lot of information is needed to lessen the chance of a misinterpretation by the user. Another suggestion was to develop a voice recognition system. This would help those in full protective gear whose gloved hands would not be able to push buttons. When a situation is highly hazardous and does not allow for the command center to be located near the incident site, it would be beneficial for a wireless capability to be available.

The BRP was pleased with the level of detail already built into ADASHI. They stated that this is the most highly developed consequence management tool to date.

### 3. CONCLUSIONS

The entire survey and BRP process successful. The developers gained useful insight into the needs of the responder community. This report will enable the developers of ADASHI to make necessary improvements in the software so that ADASHI will be a valuable tool for its users.

One "lessons-learned" is that the target audience be well defined prior to survey development to avoid making modifications to the survey during the development phase.

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APPENDIX A  
SURVEY PACKAGE



**DEPARTMENT OF THE ARMY**  
U.S. ARMY SOLDIER AND BIOLOGICAL CHEMICAL COMMAND  
5183 BLACKHAWK ROAD  
ABERDEEN PROVING GROUND, MARYLAND 21010-5424

Dear Sir or Madame:

February 13, 2004

The ADASHI, Automated Decision-Aid System for Hazardous Incidents, will be a tool for incident commanders and response teams at chemical/biological incidents to aid in the decision-making process as well as a response template for guiding the actions of responders. The developers feel it also has usefulness as a training and planning tool for improving response to these incidents.

The purpose of the user survey is to find out what the ADASHI tool should look like and how it should work. The areas of interest for the survey include the following: ease of use, "value added", areas of improvement, and needed features/functions.

On the ADASHI web page <http://hld.sbccom.army.mil/ADASHI/adashi.htm>, you will find directions for completing the survey, screen shots for the incentive package, the ADASHI demo, screen shots for the survey, and the on-line survey link. To access the survey, you will need the following password: responders. As a courtesy, the ADASHI demo disk has been included in this mailing.

**As an incentive to "helping us help you", when your completed survey is mailed back to our Decision Analysis Team (DAT), we will send you a complimentary Automated Emergency Response Guide (ERG) software tool that will have the current ERG digitized such that automatic plotting of isolation and exclusion zones can be overlaid on to GIS mapping grids. An example of the plotting capability of this tool is attached.**

The process for assessing ADASHI is being led by James Genovese and will be supported by the DAT. This project is a cooperative effort with Optimetrics Inc., who is the co-developer of this prototype software tool with Edgewood Chemical Biological Center (ECBC). The assessment process will be conducted in several stages listed below along with a description of the User Survey.

1. User Survey
2. Summary of User Feedback
3. Focus Group Meeting
4. Reporting of Results

User Survey

The DAT has developed a survey. This survey is being sent to variety of emergency responders including the incident managers, police department, fire department, emergency medical service, and hazardous material teams. Homeland Defense responders at the federal (military and civilian) level will also be included in this response survey. We are expecting the ADASHI tool to significantly improve response to hazardous materials events.

You have been identified as key personnel to assist us in generating a database of hazard and emergency response personnel to send our survey tool to for input.

Please consider helping the US Army in this endeavor.

If you have any questions, you may contact Genna Lee Buckless of the DAT at [Genna.Buckless@SBCCOM.apgea.army.mil](mailto:Genna.Buckless@SBCCOM.apgea.army.mil).

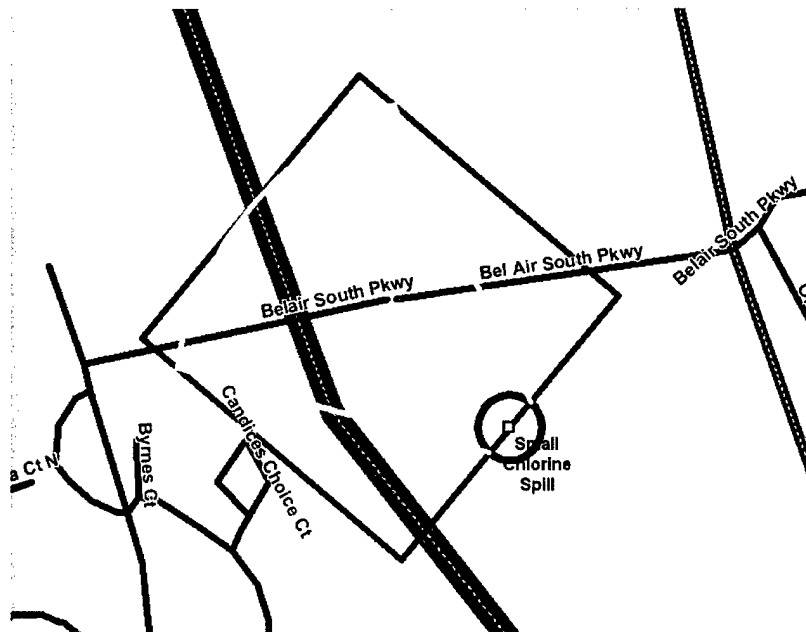
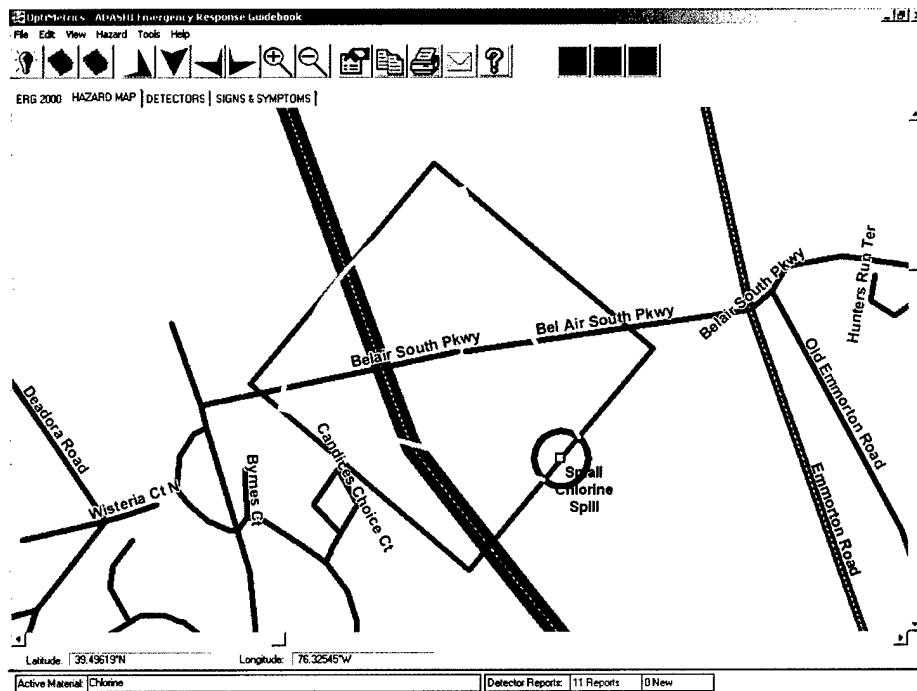
Thanks so much for you assistance.

James A. Genovese  
US Army Soldier Biological Chemical Command Responders



Incentive Package- Below, are 2 screen shots from the Automated Emergency Response Guide (ERG) software tool.

- The first captures the entire user interface (the map plus the controls).
- The second shows just the map portion.



### **Directions for completing the ADASHI survey**

1. Open the ADASHI Demo. Please read the “readme” file; if you do not have WORD, then read the READ FIRST file. After reading the file, then completely review all of the following within the “index”:
  - a. Summary
  - b. Modules
  - c. Demos
2. Open the link for the SURVEY PICTURES
  - a. Print the pictures
  - b. Retain for reference while you are completing the survey
3. Open the link for the SURVEY
  - a. Follow the on-screen directions
  - b. You will need a password which can be found in your invitation letter/email
  - c. Only include your name in the survey if you want the incentive package, otherwise you may remain anonymous
  - d. When you have completed the survey, the DAT will be sent the survey results

Thank you for your feedback!

## ADASHI Survey

a. What are your current on-hand hazard analysis and decision support capabilities?

b. Do you think that you have the tools to respond to a CBRN threat?

yes

no

☐☐

c. Is your HAZMAT training up-to-date?

yes

no

☐☐

d. What are your biggest hazard analysis and decision support needs?

Please look at the 1st 5 screen captures from the Survey Pictures link. How would you as the user want to see the screen? If different, please explain.

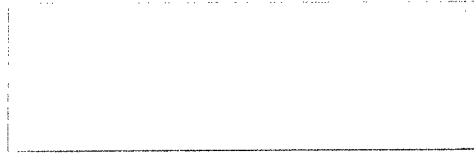
This is the link for the survey pictures: [http://hld.sbcom.army.mil/ADASHI/DOCS/survey\\_pictures.doc](http://hld.sbcom.army.mil/ADASHI/DOCS/survey_pictures.doc)

☐

Site Specific Information

Signs and Symptoms Observed

**Incident Commander's Status Screen**



**Database for Asset Tracking**



**Number of Casualties Over Time**



**a. Will the ADASHI tool give added value to your current capabilities?**

yes

no

☐☐

**Please explain.**



**b. What features/functions would you like to see incorporated into ADASHI? (Please explain.)**



**a. Are the following applications important to your requirements?**

	yes	no
training	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
responding	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
planning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**b. Does it have use as a tool for the following?**

	yes	no
training	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
responding	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
planning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**c. Is the application useful in its present/anticipated form?**

	yes	no
training	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
responding	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
planning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Which outdoor and indoor models should be embedded in the "barebones" ADASHI tool? Select the model you would like to include. Then indicate whether you "Use Now" or "Would Like".

**• INDOOR**

	Include This Model	Use Now	Would Like
Chem INDEVAP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bio INDEVAP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EPA Risk Model	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

If you chose OTHER for the INDOOR model, please explain.

**• OUTDOOR**

	Include This Model	Use Now	Would Like
D2PC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
VLSTRACK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HPAC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cameo/Aloha	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ERG 2000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

If you chose OTHER for the OUTDOOR model, please explain.

Do you want a tutoring capability in ADASHI for the following?

Terms/Definitions		Key Functions/Options	
yes	no	yes	no
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Do you want ADASHI to suggest operational alternatives? If NO, please skip to question 8. If YES, please choose the alternative(s) you would like to have.

yes	no
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

a. Please rate the usefulness of ADASHI in the following areas (from 1 as Not Useful to 5 as Extremely Useful):

	Not Useful (1)	(2)	(3)	(4)	Very Useful (5)
Realistic Hazard Area Plotting (We intend to integrate a concentration-time history with an actual detection probe.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ERG Hazard Area Plotting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Signs and Symptoms Algorithm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personnel Location Mapping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protective Equipment Database	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treatment Database	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Status (Real-time Situational Awareness) Checklists	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampling and Intel Algorithm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decontamination Equipment Usage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Indoor Hazard Area Plotting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Response Guide	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casualty Prediction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b. We have realistic hazard area plotting; with regard to range of models and GIS maps would you like to see a dual graphical map overlay/display?

yes	no
<input checked="" type="checkbox"/>	<input type="checkbox"/>

**9**

a. Would you like to see ERG2000 enhanced to provide automatic calculation of isolation and exclusion areas?

yes ☒ no ☒

b. Would you like to see the plot on a GIS grid map?

yes ☒ no ☒

**10**

Do you believe it is important to predict the distribution of hazards? If YES, then please select those of concern from the listing below. If NO, please skip to question 12.

yes ☒ no ☒

**NERVE**

Of Concern

• G ☒

• VX ☒

**BLISTER**

Of Concern

• Sulfur Mustard ☒

• Nitrogen Mustard ☒

• Lewisite ☒

• Phosgene Oxime ☒

**BLOOD**

Of Concern

• Cyanogen Chloride ☒

• Hydrogen Cyanide ☒

**CHOKING**

Of Concern

• Phosgene ☒

• Chlorine ☒

**BASE GAS**

Of Concern

• Ammonia ☒

**ACID GAS**

Of Concern

• Hydrogen Chloride ☒

**OTHER**

Of Concern

• Cyclohexane ☒

• Hydrogen Sulfide ☒

• Sulfur Dioxide ☒

• Phosphine ☒

• Nitrogen Dioxide ☒

• Formaldehyde ☒

• Arsine ☒

If there are others that are not listed, please list them in the comments block. (This listing is from the Proposed Test Concentrations for NIOSH CBRN APR Certification.)

Do you believe "dual use" detection is useful for monitoring TICs and CWAs? (This would ensure that one set of equipment is adequate to detect both types of hazards.) Please provide comments.

yes      no  
☒      ☒

In the effort to move toward dual-use assessment for conventional HAZMAT, as well as CBR terrorism events, the ADASHI Palm Pilot Field Demonstration will wirelessly and remotely link detection systems (fixed site) and recon teams (Palm Pilot inputs). This will relay information real-time back to the EOC. We are attempting to integrate manual detectors like the M8, M9, M256, and Draeger tubes with instrumental detectors such as the APD 2000, BAWs, ACADA, TVA1000B (FID/PID) and IR (SapphIRe). Are there other detectors that you would like to see in the Field Demonstration?

Are there features/functions that you would like to see incorporated into ADASHI? (Please explain.)

yes      no  
☒      ☒

How would you envision a status (real-time situational awareness) screen that would keep you, the user, up-to-date on the event-tracking key response function over time and space?

How would you like to see the information input formatted for your particular Responder area? (e.g. Dispatcher/911 automated entry)



Please look at the last 5 screen captures from the Survey Pictures link for the various detector algorithms. How would you as the user want to see the screen? If different, please explain (Please reference the title of the screen).

	same	different
signs and symptoms (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
tab from the ERG-GUIDE 131 (2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
signs and symptoms with selections (3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Information for an Inside hazard (4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
number of casualties over time (5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

This is the link for the survey pictures:

[http://hld.sbcom.army.mil/ADASHI/DOCS/survey\\_pictures.doc](http://hld.sbcom.army.mil/ADASHI/DOCS/survey_pictures.doc)



#### Incentive Package Request

If you would like to receive an INCENTIVE package, please enter ALL of your contact information (i.e. name, address, phone #). If you do have an email address, please include it. None of this information will be distributed. This information will only be used to send the INCENTIVE package and to contact you if we have further questions.



## Question 2:

**ADASHI - Inside Hazard Source Description**

Source Type

Amount of Release (ml)

Air Conditioning  
 Air Conditioner On? ☒ (Yes)  
 CFM Value

Room Conditions  
 Length (ft)   
 Width (ft)   
 Height (ft)   
 Temperature (C)

Natural Ventilation  
  
 ACH value

Positive Pressure  
☐ Do you have a PP system?

Collective Protection  
☐ Do you have a CP system?

Clear Reset **OK** Cancel

This screen is an example of site-specific information for an inside hazard. Default information is provided. Please refer to screen # 22 in the ADASHI demo.

**Agent Identification - Signs / Symptoms**

Signs / Symptoms...  
 Choose All Observed Items for: EYES

☐ Miosis  
☐ Dim Vision  
☐ Light Sensitivity  
☐ Tearing  
☐ Itchy  
☐ Burning  
☐ Eye Pain

Initial Observation Time...  
☐ Seconds  
☐ Minutes  
☐ Hours  
☐ Days

Eyes	Nose	Mouth
Lungs	Gastro Intestinal	Body
Mental	Color	Odor

Cancel Done

This form allows for entry of the various signs and symptoms observed, and how long after the incident they were observed. Please refer to screen # 41 in the ADASHI demo.

**Automated Decision Aid System for Hazardous Incidents**

File Tools Help

**Time**

Event Time: 14:18 Nov 06 2001

Current Time: 14:31 Nov 06 2001

Elapsed Time: 13 minutes


**Weather Information**

Wind Speed (KPH): 9

Relative Humidity: 71

Temperature (F): 75

Wind Direction (deg): 15



**Hazard Source Description**

Release Type: Inside - Spill

Room Dimensions (ft): 200 x 125 x 25

[Details](#)

**Agent Description**

CONFIDENCE

100 %

50 %

0 %

☒ Signs / Symptoms

☐ Intelligence

☐ Detection and Monitoring

☐ Concentration Status

[Details](#)

Never

**Asset Management**

[Detection and Sampling](#)

[Mitigation](#)

[Decontamination](#)

[Medical](#)

[Protective Clothing](#)

This is an example of an incident commander's status screen. It displays all known information about an event. Please refer to screen # 116 in the ADASHI demo.

**ADASHI - Detection Equipment**

USMC: CBIRF

- ☐ M3A1 Paper - Number In Inventory: 215 of 215
- ☐ Draeger Tubes, multipack - Number In Inventory: 4 of 4
- ☐ CAM (Chemical Agent Monitor) - Number In Inventory: 21 of 21
- ☐ M256A1 Detector Kit - Number In Inventory: 62 of 62
- ☐ M21 Remote Sensing Chemical Agent Alarm - Number In Inventory: 3 of 3
- ☐ Multigas Monitor Kit - Number In Inventory: 12 of 12
- ☐ Viking Mass Spectrometer - Number In Inventory: 4 of 4
- ☐ HAZMAT Kit, Deluxe Kit - Number In Inventory: 4 of 4

Remarks:

False Readings:

Cost:

[Continue](#)

The number of standard items available for a selected organization is displayed. The items are saved in a database for asset tracking. Please refer to screen #153 in the ADASHI demo.

**ADASHI - Decontamination Summary**

Potential Number of Casualties

☒ ADASHI Scenario Distribution ☐ User Defined

Number of Casualties

---

**Incident Site** **Health Care Facility**

Emergency Decontamination Rate (casualty throughput)

Non-Ambulatory Emergency Decon		Ambulatory Emergency Decon	
Number of Casualties Per Hour	<input type="text" value="24"/>	Number of Casualties Per Hour	<input type="text"/>
Number of Stations	<input type="text" value="1"/>	Number of Stations	<input type="text"/>
Total			
Non-Ambulatory Casualties	<input type="text"/>	Ambulatory Casualties	<input type="text"/>
Total			
Time for Processing (Hours)	<input type="text"/>	Time for Processing (Hours)	<input type="text"/>

ADASHI estimates the number of casualties over time, as well as the severity, based on the total number entered. Please refer to screen # 184 in the ADASHI demo.

## Question 16 :

**Agent Identification Signs Symptoms**

**Signs / Symptoms...**

**Choose All Observed Items for EYES**

- ☒ Miosis
- ☐ Dim Vision
- ☐ Light Sensitivity
- ☐ Tearing
- ☐ Itchy
- ☐ Burning
- ☐ Eye Pain

**Initial Observation Time...**

- ☒ Seconds
- ☐ Minutes
- ☐ Hours
- ☐ Days

Eyes	Nose	Mouth
Lungs	Gastro Intestinal	Body
Mental	Color	Odor

This form allows for entry of the various signs and symptoms observed, and how long after the incident they were observed. Please refer to screen # 41 in the ADASHI demo.

Emergency Response Guidebook

File
Incident Response
Guides
Index
Window
Help

GUIDE 131 FLAMMABLE LIQUIDS - TOXIC

Potential Hazards

Public Safety

Emergency Response - 1

Emergency Response - 2

FIRE OR EXPLOSION

HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.  
Vapours may form explosive mixtures with air.  
Vapours may travel to source of ignition and flash back.  
Most vapours are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).  
Vapour explosion and poison hazard indoors, outdoors or in sewers.  
Some may polymerize (P) explosively when heated or involved in a fire.  
Runoff to sewer may create fire or explosion hazard.  
Containers may explode when heated.  
Many liquids are lighter than water.

HEALTH

TOXIC; may be fatal if inhaled, ingested or absorbed through skin.  
Inhalation or contact with some of these materials will irritate or burn skin and eyes.  
Fire will produce irritating, corrosive and/or toxic gases.  
Vapours may cause dizziness or suffocation.  
Runoff from fire control or dilution water may cause pollution.

1185

Ethyleneimine, inhibited

IIPAD

Print

Table of Initial Isolation and Protective Action Distances

		SMALL SPILLS						LARGE SPILLS					
		First ISOLATE in all Directions		Then PROTECT persons downwind during				First ISOLATE in all Directions		Then PROTECT persons downwind during			
				DAY						DAY			
ID No.	Name of Material	Meters	(Feet)	Kms	(Miles)			Meters	(Feet)	Kms	(Miles)		
1185	Ethyleneimine, inhibited	95	300	0.3	0.2	1.3	0.8	245	800	1.1	0.7	4.8	3.0

This view shows a tab from the ERG-GUIDE 131 regarding flammable liquids. Information about Ethyleneimine is provided.

**Agent Identification - Signs / Symptoms**

**Signs / Symptoms...**

Choose All Observed Items for: EYES

- ☒ Miosis
- ☒ Dim Vision
- ☒ Light Sensitivity
- ☐ Tearing
- ☐ Itchy
- ☐ Burning
- ☐ Eye Pain

**Initial Observation Time...**

- ☒ Seconds
- ☒ Minutes
- ☐ Hours
- ☐ Days

Eyes	Nose	Mouth
Lungs	Gastro Intestinal	Body
Mental	Color	Odor

Cancel Done

This form allows for entry of the various signs and symptoms observed, and how long after the incident they were observed. Please refer to screen # 41 in the ADASHI demo..

**ADASHI - Inside Hazard Source Description**

**Source Type**

Spill

**Amount of Release (ml)**

750

**Room Conditions**

Length (ft) 200

Width (ft) 125

Height (ft) 25

Temperature (C) 21

**Air Conditioning**

Air Conditioner On? ☒ (Yes)

CFM Value 700

**Natural Ventilation**

Windows Closed

ACH value 0.074

**Positive Pressure**

☒ Do you have a PP system?

Start at 20 minutes

CFM value 20000

**Collective Protection**

☒ Do you have a CP system?

Start at 1 minutes

CFM value for Qr 20000

Efficiency 0.997

Clear Reset OK Cancel

This screen is an example of site specific information for an inside hazard. Default information is provided. Please refer to screen # 22 in the ADASHI demo.

**ADASHI - Decontamination Summary**

☒ ADASHI Decontamination Summary
 ☐ Set Decon

	PREVAIL	IMMEDIATE	DEFERRED	WOUND	GRAND TOTAL
Number of Personnel	21	21	18	0	64

Non-Ambulatory		Ambulatory	
<b>Non-Ambulatory Emergency Decon</b>		<b>Ambulatory Emergency Decon</b>	
Number of Personnel	24	Number of Personnel	234
Number of Casualties	1	Number of Casualties	1
Number of Ambulatory	0	Number of Ambulatory	0
Number of Ambulatory	0	Number of Ambulatory	0
Number of Ambulatory	0	Number of Ambulatory	0

000333 05pp1

ADASHI estimates the number of casualties over time, as well as the severity, based on the total number entered. Please refer to screen # 184 in the ADASHI demo.

Blank



## APPENDIX B

### RAW COMMENTS-INDIVIDUAL RESPONSES

	1a. What are your current on-hand hazard analysis and decision support capabilities?
1	Current computer
2	Much instrumentation Modeling GIS support Training
3	Basic 4/5 gas detection radiation detection CAM M8/M9 M256 Kit weather station sampling tickets for anthrax ricin BT pH paper colormetric tubes
4	Currently use a combination of printed field-guide type material in addition to computer simulation software. The computer simulation software that is being used is rather simplistic and does not adequately meet the needs of our organization.
5	BS in Safety Engineering; MS in Civil and Environmental Engineering; various and multiple training in hazard and risk assessment; DOJ sponsored training in WMD (Alabama?) and Radiological (Nevada); 20+ years in the emergency services; 15+ years of application of safety and environmental engineering I have the various research and reference materials collected through the years of obtaining the above training and experience
6	The responders guide Emergency Response Procedures MSDS Online detection / monitoring (toxic gas detectors monitoring different gases-MDA Zellwegger
7	Cameo
8	ERG 2000 Handbook
9	Operations and Technician level HAZMAT/CBRN training with various support manuals (Jane's DOT ERT:J CHRIS manuals etc.
10	Strictly detection & monitoring equipment and I.C.'s experience
11	DOT/CDC Guidebooks Haz Mat Training and personnel experience Internet/MSDS Several Chemical Engineers CAMEO
12	Palm software hardbound reference manuals and COBRA System manufactured by DGI. Numerous sensors such as Handheld radiation detector Multi Ray GR-130 Exploranium spectrometry.
13	EIS Gem with Aloha NBC Warning and BLAST CATS HPAC ARC View GIS
14	EIS GEM with Aloha Blast and NBC Warning HPAC and CATS ARCVIEW
15	ERG EPA Green book CAMEO/MARPLOT/ALOHA
16	
17	DOT book. Some support from DTRA.
18	Our hazardous Materials team depends on cameo and a written site safety plan as well as fire dex or rsac 5 for radiological. We also utilize field books on Incident Command for Chem/Bio and other responses.
19	CHRIS Manual Jane's Army Guides for Managing Chemical and Radiological Casualties APD 2000 M8 Paper M256 Kits Draeger Kits Rad Monitors Other reference books COBRA CAD Module CAMEO
20	Cameo Orion
21	NCC fire board- CAMEO CD databases for MSDS's; DNREC response with equipment reference manuals; NCC Hazmat team with equipment references.
22	We do not have many since we are new to this.
23	CAMEO COBRA

\*The number in the left-hand column of the raw data represents the line number in the spreadsheet per written response. Only the open-ended responses are included in this raw data.

	1a. What are your current on-hand hazard analysis and decision support capabilities? (Continued)
24	Hard copy reference material. Training expertise. Safer plume modeling software.
25	incident command operations and entry team member
26	Various printed reference materials
27	Numerous computer and printed resources including CAMEO Niosh Bioterrorism Bio/Chem Agents ERG CHRIS. The hazcat kit sampling equipment and radiological detectors are also available.
28	HPAC CATS-JACE ALOHA
29	We use CAMEO and other reference materials for our hazard analysis. Currently we are looking at programs that would be a computer based system.
30	CAMEOfm CATS HPAC OREIS Monitors
31	very little but have had a couple of classes concerning this
32	I am Director of Newton County Emergency Management. I am COBRA trained at Anniston AL. Radiological trained at Carlsbad NM (WIPP) WMD explosives at Socorro NM Tech II HAZMAT will take WMD radiological at Bechtal NV next month. We are forming a Regional Response team for WMD to cover a 9 county area. We will soon be purchasing equipment for our county response team with money from Homeland Security.
33	TOMES Plus CAMEO CABO ALOHA
34	manual reference materials and computer aided systems such as CAMEO ALOHA and MARPLOT.
35	NBC CREST BIO STRIKE HPAC
36	Only the knowledge of the responders
37	As the NC Regional Response Team (RRT) for the Western Region of NC our hazardous materials team has a number of detection devices and monitoring equipment for the detection of hazardous substances and WMD.
38	manual map and information from weather radio.
39	manual map and Kentucky windage
40	CD rom data base; Chemtrec; NCC hazmat team
41	NARAC computer based plume modeling program CAMEO/MARPLOT/ALOHA PEAC wmd software
42	cameo aloha
43	CAMEO/Marplot PEAC WMD software NARAC Plume Modeling COBRA
44	CAMEO/Marplot/Aloha PEAC WMD software NARAC Plume Modeling COBRA
45	CAMEO software
46	HPAC CATS ERG NIOSH data bases
47	ADP 2000 4 gas meters pocket guides
48	Combination of emergency response guides and matrices
49	Currently we have the ERG that everyone else has. We also have laptop computers in every engine that are equipped with ALOHA and CAMEO. Currently those are the only decision support items we have. As far as analysis we have RHAVE and Firehouse software to predict some high risk occupancies and AutoCAD made preplans on every engine and in every commander's vehicle that have high risk things marked like haz-mat storage and what chemicals can be found in each occupancy.
50	Tomes CAMEO Aloha Marplot
51	We have CAMEO OREIS Numerous handbooks HAZMAT TECHNICIANS many resources available
52	Various methods such as monitoring equipment like CAMS APS 2000 Guardian Radiation detectors and the like. We have access to various gov't labs. Using threat assessment signs and symptom and previous experience helps us to determine our actions.
53	Academic knowledge from medical school training

	1a. What are your current on-hand hazard analysis and decision support capabilities? (Continued)
54	ERG Emergency Response to Terrorism Job Aid
55	Emergency Response Guide. NIST NIOSH Pocket Guide TOMES EPA HASP OSHA HASP
56	NIST Emergency Response Hand Book NIOSH Pocket Guide ACGIH TLV/BEI TOMES
57	Range of military chem detectors. Draeger tubes. Hapsite. Air samplers. Downwind hazard model - HPAC.
58	HPAC
59	4 gas Electrochemical Instruments PID (ppb) Radiation Detection and dosimetry Ion Mobility SAW laser particle counter
60	NIOSH GUIDE ATSDR tools CDC tools USAMRIID/USAMRICD tools HPAC/CATS/JACE modeling tools ChemWeb NIST/AMDIS libraries analytical: GC/MS Hapsite RAPID PCR DoD HHAs Travel IR Microscope Army green chemical gear
61	CAMEO ALOHA and PEAC-WMD software programs along with several chemical and biological reference sources.
	1b. What are your biggest hazard analysis and decision support needs?
1	Toxic Industry Materials
2	Reliable field identification of agents. Data reporting and tracking from field via web access to enable project updates logistics info personnel tracking etc.
3	Early definitive agent identification
4	Need a computer simulation model with extensive database lookup capabilities. Initial paper references would be beneficial in cases where initial computer access is not available.
5	The tremendous amount of data and information that must be evaluated confirmed referenced and processed in the short amount of time necessary to positively impact a domestic WMD incident is probably the greatest challenge
6	Modeling
7	In field analysis tools. This includes everything from chemical information to incident mapping overlays or plume travel.
8	Consequence Analysis Air Spreading Analysis CBN Materials Data
9	A system such as ADASHI would fit the bill very nicely as it focuses more on the exotic/military HAZMAT issues.
10	A tool which quickly analyzes existing data and returns several possible scenarios and solutions
11	Since we are a commercial nuclear power plant we are pretty good at the radiological portion of response although we still have some convincing to do when it comes to things like a RDD. Our emergency responders can relate to this type of scenario the RAD techs have trouble theorizing an attack and response. Where we are shorter in the training area is Chem/Bio. Hazard analysis in this area is lacking.
12	RELIABLE hazard screening tools such as handheld chemical agent detectors.
13	The ability to disseminate the data throughout the response community in a timely fashion. The need for web based software.
14	The ability to disseminate information between agencies and all levels of government.
15	Training Detection equipment modeling software
16	A rapid tool that will allow for command decisions a simple hazard analysis process.
17	Rapid identification and recognition of CBRN incidents User friendly aids that first responders can utilize quickly
18	Integration of assessments and situations into a decision model.

	1b. What are your biggest hazard analysis and decision support needs? (Continued)
19	plume modeling predictions; risk assessment especially quantitative; detection equipment.
20	We have out dated printed text for our reference needs.
21	remote detection to include qualification and quantification of hazards
22	Real time WMD specific information
23	monitoring and detection
24	Update reference equipment updated training
25	The biggest need is for bioterror detection equipment which is only available through the special units of the military (army/air guard units).
26	Our biggest issue is not so much what hazards are being analyzed but the coordination that is necessary to have everyone come out on the same page and share information. Various elements putting different variables into the equation obviously gives your widely varied outputs. Whatever outputs that are generated need to be shared to a variety of users quickly. We have found that converting all outputs to pdf files is one way of doing this. Also the limited use of color so materials can be faxed is very helpful.
27	We need a good decision making tool that walks our Chief Officers through an incident priorities for a WMD event.
28	More Information
29	everything we are a small department with a larger Haz-Mat response team 20 minutes away
30	I have tons of information from the many schools I have been to. I would like a computer program that is linked to data bases like Hawley's Chemical Dictionary ERG Farmers Chemical Book etc. I can't bring my library to the scene. I can take my laptop.
31	Any type of hazard prediction tools that I can put in my tool box.
32	Reliable detection and sampling equipment with the ability to interpret the collected data in a timely manner.
33	Number of casualties resources needed to treat them decon requirements what can be done to prevent an event
34	Monitoring instrumentation
35	Accurate reliable simple sensitive and specific means of detecting the presence of chemical and biological weapons.
36	manpower equipment and software
37	personnel equipment and software
38	plume tracking; container failure prediction & behavior; air monitoring
39	any program that can help
40	Hazard characterization and physical properties Signs/Symptoms matrix Plume Modeling
41	Identification of unknowns
42	Assessing level of ppe required. Stay times. Evacuation limits
43	Immediate access to monitoring equipment
44	Rapid and reliable detection capability to accurately identify a potential agent. Once the agent is identified then the support information supplied by ADASHI especially in the area of decon estimates looks very useful.
45	What we need is a program just like ADASHI. My department is the first responder to these calls so we need the evacuation victim predictions and everything else ADASHI has along these lines. My department is also the local decon team so decon predictions including number of victims needing decon how many can be expected to be ambulatory/non-ambulatory and how much and what type of decon solution will be needed.
46	adequate proper PPE isolation distances downwind protective action zones agent I.D.

1b. What are your biggest hazard analysis and decision support needs? (Continued)					
47	MONEY Up to date and timely. We are a small office both HAZMAT TECHS with some WMD training.				
48	Continuity in methods training personnel etc. A good computer based system would be nice.				
49	Up-to-date reference material and decision support tools				
50	Monitoring and Detection				
51	A tool that will quickly provide PPE selection and management.				
52	PPE selection using a protection factor method.				
53	Bio identification. Field laboratory.				
54	Integrated systems Bio Identification				
55	Coordination of real time area wide monitoring. Interoperability of instrumentation to provide a complete picture of the incident				
56	A simplified combined system in which to input all information and get a response with likelihood of threat.				
57	Real time information gathering particularly population-affected projections and analysis. Concise procedural/tactical response recommendations or suggested action guides.				
2. Please look at the 6 screen captures below. How would you as a user want to see the screen?...					
	Site Specific Information	Signs and Symptoms Observed	Incident Commander's Status Screen	Database for Asset Tracking	Number of Casualties Over Time
1	OK	OK	OK	OK	OK
2	No changes	No changes	No changes.	Possible include information regarding equipment replenishment or resupply.	No changes.
3	These screen seem to be simple in description and easy to use	These screen seem to be simple in description and easy to use	These screen seem to be simple in description and easy to use	These screen seem to be simple in description and easy to use	These screen seem to be simple in description and easy to use
4	In Room Conditions it is for Building or Single Room or Multiple Rooms		Where is the Responders' Data? Data of numbers or resources		who is Commander of Casualties? Where is the resource of hospitals?
5	While CFM is important for calculating HVAC system dispersal of the agent or vector it is not always a readily known value. And especially in the northern climates does ADASHI consider heating versus air conditioning?	Seems like a comprehensive list and going on a symptom based approach is the easiest for 1st responders.		Consider a default set of values for national program response agencies	Consider re-ordering the categories to real-time priority - red yellow green and then black. The Decon section is a excellent tool with limited decon capabilities

2. Please look at the 6 screen captures below. How would you as a user want to see the screen?  
(Continued)...

	Site Specific Information	Signs and Symptoms Observed	Incident Commander's Status Screen	Database for Asset Tracking	Number of Casualties Over Time
6	These screens seem to be appropriate as viewed. An important feature of the ADASHI would be the ability to alter the program/screens after beta testing.				
7	Can the Temperature block be in degrees F ?	No concerns	Might want to clarify the wind direction. Is the wind coming from or going towards degree indicated. I realize this is usually stated as from but the decision may eventually be made to evacuate or protect persons in the downwind direction. I also note on this screen the temperature is stated in degrees F.	No comments	I would have put the red Immediate block on the left or 1st and the yellow next so I suggest reversing the order of these blocks.
8	No specific recommendations for change. Having default values for the CFM value and ACH value should be based on approximate room size but may not be possible because the room will probably be a small portion of a larger building. How are these default values determined? If there is not a reliable way to estimate a default value it may provide faulty assumptions to the on scene commander.	Consider adding a button which when pressed will show a quick summary of all signs and symptoms currently selected. This will make it easier to review the symptoms and make changes if needed or symptoms change over time (as they often do).	Consider adding a button which will show a listing of all agencies on site along with contact information for each.	This database will quickly become outdated and be difficult to maintain. Tracking the assets may be futile as when the incident occurs each team will be able to articulate their assets as the situation dictates. Even if the database was used by a single entity (for example the CST) they probably will have their own method for tracking assets which will be modified at every scene because they will not necessarily bring all their resources to a scene.	Excellent screen.

2. Please look at the 6 screen captures below. How would you as a user want to see the screen?  
(Continued)...

	Site Specific Information	Signs and Symptoms Observed	Incident Commander's Status Screen	Database for Asset Tracking	Number of Casualties Over Time
9	Fine as is but for consistency I would use the same format throughout. i.e. Do you have a PP System? ___ (Yes). As it appears for the AC Question.	Fine as is. It is concise yet simple to use.	Would it be possible for this window (in a reduced size) to appear throughout the use of ADASHI so that the I.C.'S. can monitor elapsed times wind direction etc. It is also important to first responders that ADASHI be compatible with all types of met stations: common manufacturers (Costal Climate) that provide equipment to the 1st. response community.	Must be capable of a simple method of inputting the local teams assets.	This is great. Under Anticipated Pharmaceutical needs it may be nice to have a window of the specific requirements: Atropine EPI Pam
10	I am satisfied with it as is	I am satisfied with it as is	as is	as is	as is
11	Leave as is!	Leave as is!	I would add location and for outside spill waterways sewers general population areas for protective actions.	It should list all assets available personnel vehicles equipment hospitals etc.	Okay
12	give generic location types with general sizes that can also be modified when specific information is found				
13	I think it is good. Easy to operate straight forward will not take a lot of time to navigate.	I think it is good. Easy to operate straight forward will not take a lot of time to navigate.	I think it is good. Easy to operate straight forward will not take a lot of time to navigate.	I think it is good. Easy to operate straight forward will not take a lot of time to navigate.	I think it is good. Easy to operate straight forward will not take a lot of time to navigate.

2. Please look at the 6 screen captures below. How would you as a user want to see the screen?  
(Continued)...

Site Specific Information	Signs and Symptoms Observed	Incident Commander's Status Screen	Database for Asset Tracking	Number of Casualties Over Time
<p>what is an ACH value?? might consider using HVAC instead of air conditioning. Both will similar effects. One's hot the other's cold. Responders will probably not know the CFM data for an HVAC system unless significant preplanning has been done for a facility OR a facility building engineer that is knowledgeable is present to answer the questions. Initial response to an incident will not</p> <p>14 have information regarding the amount of material released or how released unless provided by initial victims initial 911 call or witnesses to the event. Even this information may be unreliable. perhaps a worst case scenario selection or unknown can default to a value that will provide the worst case scenario data input to ADASHI when specific information is not available</p>	<p>no suggestions. This information would be readily available from initial victims signs and symptoms.</p>	<p>personnel accountability information - numbers of responders on scene</p>	<p>is cost of the asset critical information? numbers of assets availability location (many jurisdictions have items deployed at numerous locations / vehicles) alternative sources of assets - mutual aid to include quantities POC time for deployment</p>	<p>no change</p>



2. Please look at the 6 screen captures below. How would you as a user want to see the screen?  
(Continued)...

	Site Specific Information	Signs and Symptoms Observed	Incident Commander's Status Screen	Database for Asset Tracking	Number of Casualties Over Time
15	Site specific information includes room conditions air conditioning and airflow and natural ventilation. There is no indication of collective protection or positive pressure to limit spread of room contents. (Need yes or no not question as no way to answer) Question 22 in demo not available. If it is necessary it should also be included for easy access.	Signs and symptoms need more detail as to amount of minutes. Individual log to identify progress of symptoms and signs could also be an aid (perhaps on a separate PDA by medical providers (Louisville Public Health-resource) Viewing log to note progress of symptoms should also be a part of the program fed by PDA info. this would allow the personnel developing a plan to concentrate on their job while utilizing support personnel to gather information and feed it in to the planners.	General outside information indicating conditions but not including control within the building evacuation shelter internal controls ppe entry teams media updates (potential checklist and time log for aid to support IC)	Additional resources would be available from other sources and listed on a separate listing but linked to resources to be used by planning and logistics. A running log of supplies used for the incident should also be available.	A listing of available care facilities including satellite emergency locations staff decon and ppe should be included in this section. Monitoring ability of spread of contamination is necessary for both the care of the injured and responders. Again a log of information can be available on a PDA by care givers (triage personnel specifically) and fed to a main unit and linked to chronological log and incident command update information.
16	If I am responding to a event I hardly ever know the quantity of material spilled. The bottle is in bits and there is a puddle on the floor. It is a wild guess how big the bottle was and therefore how much was spilled assuming the bottle was full. It would be much better to ask for the size of the spill. For example how many square feet? What is the diameter of the spill circle? In a building I can count the floor tiles and come up with a size estimate much easier than I can a liquid volume estimate.	After a semi-technical term like Miosis use a layman's definition of what it means.	Looks good	Might want to add an expiration or calibration date for each item. An item beyond its calibration date or expiration date could be flagged in some way.	Does weather enter into any of your decon estimates and calculations? The level of decon that can be accomplished in - 10 degree temps that we get in Wisconsin has an impact on operations. The chemical may not kill em but when they freeze to death you still do not come ahead.

2. Please look at the 6 screen captures below. How would you as a user want to see the screen?  
(Continued)...

	Site Specific Information	Signs and Symptoms Observed	Incident Commander's Status Screen	Database for Asset Tracking	Number of Casualties Over Time
17	The screen capture looks adequate to me. it is very difficult to appropriately answer this question without having the software package available for use. The Interface looks simple! It is a single window on the screen allowing viewing of multiple software packages.	The screen capture looks adequate to me. it is very difficult to appropriately answer this question without having the software package available for use. The Interface looks simple! It is a single window on the screen allowing viewing of multiple software packages.	I have similar comments to the window above. my questions are functional: 1. What current meteorological stations is the system designed to interface with? 2. Would it be beneficial to change the color on the confidence bar as the confidence decreases/increase?	This screen could be an amazing tool if it is incorporated correctly and easy to use! 1. What database format does the system currently support? 2. Does the information have to be hand entered or could it be imported from DBASE Access or FoxPro?	This also appears to be a useful feature but one that I would like to experiment with. The interface looks simple and self explanatory.
18	the screen is adequate	the screen is adequate	the screen is adequate	the screen is adequate	the screen is adequate
19	What did you mean by a PP System Levels Civilian or Military MOPP?	very nice	nice	What are the capabilities for these assets? HAZMAT KIT Deluxe is what?	What is your source for these casualties? MAT DMSB/JRCAB DEPMEDS/TTT database?
20	This system seems only to address inside releases. Is it also capable to be used on outside releases?	Is there a place to enter no signs or symptoms?	I would like to see wind direction given in NW S East etc. I do not know what 15 degrees really means.	Can other information be added to data base by user(s)?	I do not see the value of this function.
21	How about a tool or tip to help calculate/estimate ACH?	Simple straight-forward. If the system could respond back with questions about related symptoms for specific agents that might have been missed that would be helpful. (i.e. - after selecting VX the program would respond with: Nausea noted? Tremors noted? etc.	Appears to be exceptionally well-organized especially if the weather link is easy to set up.	Are you planning on having capability to update this information via the internet? This information will be obsolete by the time the software ships and many users will have no idea where to turn for up-to-date info much less have the time to maintain the info. A list of contact numbers in this area for each of the assets would also be helpful.	Bueno.

2. Please look at the 6 screen captures below. How would you as a user want to see the screen? (Continued)...					
	Site Specific Information	Signs and Symptoms Observed	Incident Commander's Status Screen	Database for Asset Tracking	Number of Casualties Over Time
22	Temperature is in C and not F. Will have to convert since most of us have not left the F method yet.	Seems complete but would take awhile to complete. Might not have a lot of time when first getting to a scene. Any way to condense?	Seems complete however could be better with the information overlaid onto a current map of the scene area. Would eliminate the needed to flip from one screen to another.	Looks complete and usable	looks excellent. From the medical side this is exactly information needed.
23	If more of the information from other screens could be combined.	Good information however seems like a lot of different screens to get to the final information	Good however more information on one screen	Good	Excellent
24	Looks fine to me.	OK	OK	did not see this...	OK
25	I would like to have the option of having temperature in Fahrenheit vs. Celsius Would number of windows open make a difference in your calculations	It looks good. I don't think this is the place to put COLOR or ODOR of agent. This should be under a hazard characteristics/classification on screen.	Under asset management a plume modeling button would be nice.	This would be a nice feature if we can modify to our specific inventory. Be able to enter a chemical or agent and have each instrument that is capable of detecting that chemical/agent pop up.	This would be a nice feature to get a quick estimate of potential casualties. Later in the incident do we have the capability of entering actual numbers once determined?
26		Possibly drop-down windows with symptoms	Title indicating that it is the Commander's status screen		
27	no problem				
28	A context sensitive help system might be useful if the party completing the form needs some direction.	Is there any need for cardiovascular status patient vital signs etc?	No changes	Possibly track other assets besides detection equipment such as PPE decon equipment etc.	There is currently a system in place called EMSsystem that is a web-based program that tracks hospital bed status capabilities etc. that is used for patient dispersal in a mass casualty incident. The ability to integrate ADASHI into this program would be useful
29	look easy and thought out.				
30	OK	OK	OK	OK	OK

2. Please look at the 6 screen captures below. How would you as a user want to see the screen? (Continued)...					
	Site Specific Information	Signs and Symptoms Observed	Incident Commander's Status Screen	Database for Asset Tracking	Number of Casualties Over Time
31	At first glance it looks like it covers what is needed	Easy to use. Covers most items.	I would need to be able to play with different scenarios to ensure most of the variables are dealt with. It looks good so far	As above	This is interesting. How are these numbers calculated. I think this would be a great tool.
32	good	good	good	good	good
33	Good	Good	Good	Good	Good
34	ACH and ventilation calculations will not be able to be determined during an incident. These values could be transparent to the user to prevent any confusion	Integrate a graphical representation for the body regions affected.	integrate more graphics and colors to indicate items that may need attention.	How is that information managed? If it cannot be maintained or updated from all sources it is of limited usefulness. Will this be maintained by a central location (Edgewood) for federal or military assets? Is this information sensitive?	Tracking of patients would need to integrate with existing Triage processes for instance we use a bar-coding system. How would that integrate?
35	At some point the explosive hazard should be combined with all this - especially if we are looking at a scenario with an RDD.	This part is great...at some point perhaps some lab values or objective signs could be added - possibly for the hospital based folks who might use this.		Allow for additions of assets beyond what he pull down menu's list - this will allow use by all levels of CST's and HazMat teams.	
36	Screen arrangement is OK. What is the effect of multiple rooms with a shared ventilation system - (like most buildings) or of an outdoor release (spill) in the immediate vicinity? Am I asking for too much? I am not familiar with collective protection systems.	This is nicely done. Really significant in answering the key question What do I have?	Again nicely done. I particularly like the CONFIDENCE bar.	Good information. Can local resources be included in the database by the user?	This is the kind of information I see as most critical to the IC as well as the EOC and emergency manager. It is helping to answer the key questions What do I need? and How long will it take?

3. Please explain.	b. What features/functions would you like to see incorporated into ADASHI? (Please explain.)
1 Event/issue tracking and data management. Can be accessed by others at/from remote locations. can be updated quickly?	Controlled access Remote access via web/dial-up Integrate ICS process and personnel tracking/assignments Ability to post additional info maps charts medical data directions comments etc.
2 The ability to capture spill data patient signs/symptoms and ERG all coupled with weather information is very useful. The true ability to have all the necessary equipment on a first response vehicle and not necessarily the hazmat truck may be the challenge.	Based on the demo the features look good. It would be very beneficial to be able to merge either CAMEO maps & info or E911 mapping into the software
3 It allows for an all-in-one type package that provides vital response information in a compact and easy to use format.	In addition to the ERG consider integrating common HAZMAT/WMD reference material in an electronic format.
4 Currently don't have interior spill assessment capabilities	
5 Information Collection and analysis.	
6 The ability to calculate decon needs and symptom calculated agent identification saves a great deal of time when determining response actions.	You are already looking at it - Chem Bio Radio.
7 There does not currently seem to currently exist a computer program which provides the information that ADASHI provides. Merely hoping that an I.C. will remember all of the important criteria of an NBC event is folly.	
8 Immense added value. In addition to the huge response capability that would be gained the preplanning value is tremendous. We can actually determine which buildings are safer conduct better training etc.	When the information has been entered and the program determines a Confidence value I would suggest that this value be represented by a color bar that is then displayed on all of the screens. Then if the IC changes a value the confidence may change or increase but they should not have to continually return to that particular screen to check on the Confidence value. A question that I could not answer is if the exact weather condition should also be entered... such as sunny rain cloudy etc.
9 I don't believe any tool can be all inclusive but some of the ADASHI components could be helpful. For example the casualty estimation tool would be helpful to me. I use the COBRA System as my primary Chem/Bio/Nuclear response aid but if ADASHI were installed on my COBRA laptop it would be beneficial.	The features and functionality of ADASHI at this point appears fairly simplistic and too theoretical. On scene commanders need more operational information such as databases of chemicals biological agents and other hazards. What PPE is appropriate for each and what are the major hazards of each. The ability to search variants of chemical names such as mustard gas as a variant for phosgene. Safe evacuation distances for explosives (such as the ATF safe evacuation chart for explosive laden vehicles of different sizes). These are just a few of my thoughts.
10 It will supplement current capabilities. Presently we need to view multiple references while hopefully ADASHI will give us everything in one package.	Additional Reference Materials: NIOSH pocket guide PPE Selection by manufacturer (they will make the info available to you.

3. Please explain.		b. What features/functions would you like to see incorporated into ADASHI? (Please explain.)
(CONTINUED)		
11	a great tool for training response and planning.	outdoor modeling; working in conjunction (as a suite) with CAMEO Landview/Marplot and ALOHA. plotting/mapping capability.
12		
13	We manually input data to a site safety plan by utilizing a computer program that will help compute and provide data that can be emailed to other sources we have a rapid tool for assessment and info sharing.	Basic site safety plan data such as team make up for the response team assignments hours computation for on-scene units direct tie in to cameo for data info!
14	It is easy to follow and provides rapid real time estimates for dispersion persistence and casualty estimates. Could be used with little in-depth training	
15	integrating agent identification with expected casualties leading to a management model	The planned expansions as noted. Also include High Hazard toxic industrial chemicals into the database
16		accountability information for tracking of personnel on scene ability to track assets outside of host agency (i.e. mutual aid) resource management
17	I have not seen any modeling /predicting software other than CATS that is specific for WMD.	Possibly a list of additional resource agencies that need to be contacted for the specific events that are displayed. i.e.) FBI CDC ATF
18	very much lot of information in a small package	none
19	The ADASHI would give us capabilities that we never had before.	
20	The tool can provide planning support in an organized manner as well as documentation of the events. If additional information is added and the data is downloaded to a save program the key response information can aid in both the response and critique and aid in future incident plans.	In review of the suggestion for the areas: Site specific information: Ventilation controls for collection or positive pressure. Signs and symptoms: Download a log to database for progress of signs and symptoms which are obtained and processed by care givers with PDA 9 see Louisville PH) IC Status: Building diagram (perhaps link to MARPLOT) and include ventilation controls evacuation shelter in place security ppe media updates perhaps as a checklist and time line constantly reviewed and available to ic for guidance and action. Resources: Additional resources and timeline to acquire Number of Casualties: To include care facilities staff listing time of work( exposure) ppe decon. PDA by triage to download specific signs and symptoms of victims and caregivers ( each given triage tag and number) A tracking system to be used throughout event and as follow up for care and planning.
21	good for planning unsure for real response. Largely depends how quickly and easily information can be shared.	
22	Yes anything that is computerized that helps in the decision making process will help.	The possibility of an link with CAMEO
23	I believe that some of the features of ADASHI will add benefit.the asset/inventory tracking tool is one that we are hungry for in our region. The decon/patient tracking also appears to be a useful tool.	Build on the two features I identified in 3a.

3. Please explain.		b. What features/functions would you like to see incorporated into ADASHI? (Please explain.)
(CONTINUED)		
24	Everything I need will be included in one program.	
25	It would provide a useful tool to capture the information once the initial response sequence is initiated	I did not notice any input capability for improvised explosive device recognition information. In a WMD environment it may be a useful tool to be able to capture and document IED data. I would like to see a capability that would allow for the recall of information as the initial information changes. Can the system capture...historically...all the data that is inputted as the event unfolds? When we input data do we loose it when inputting updated data?
26	The correlation of the many disciplines into the matrix with the added tracking capabilities allows personnel who have limited experience to function at a more competent level.	Interface with CAMEO ALOHA AND MARPLOT. This would allow an IC to Localize the capability.
27	It has great possibilities. It would be good to merge NBC CREST into it to get the medical assets required and the source of casualties estimation form the DMSB/JRCAB DEPMEDS/TTT	
28	It allows for systematic management of the incident with prompts from ADASHI.	Accountability function for building occupants or casualties at incident and emergency responders.
29	Multiple sources of information are the foundation of good hazmat research. Information on chem/bio weapons is scarce as it is. This program also appears to be rather simple to operate (firefighter-proof).	See comments above.
30	Picture is worth a thousand words. This program would put final resolution in picture format for all to understand.	If there is a way to condense and get more final information on one screen printout.
31	would allow map overlay that will enhance forecasting	
32	will aid in tracking and recording during that event. will be a large help in debriefing/critique	plume tracking - especially in time -event prediction.
33	gives all capabilities in one program	
34	I can see this as a great training tool.	CAMEO and other publications for determining Hazard analysis and chemical/agent characteristics.
35	cross reference existing data	unknowns identification enhancement
36	Will allow for the estimation of resources required; Quick assessment of equipment available	PPE levels of protection. Force Health protection in terms of time down range dosimetry (chemical & rad) possibility/probability of heat casualties vs. time with level of protection and temp. Ability to work multiple spills.
37	This seems to be a very easy system to work.	Pictures of the equipment or items may be helpful for rapid access
38	It will help to give more structure and direction as well as accountability and management of the incident.	Incorporate into the EMSsystem as previously described. For more generalized haz-mat response integrate other reference materials such as the NIOSH Pocket Guide or the CHRIS Manual. If we can use the tool for indoor and/or outdoor events of standard haz-mat incidents then we are much better prepared to use the tool if there is an actual WMD event.

3. Please explain.		b. What features/functions would you like to see incorporated into ADASHI? (Please explain.)
(CONTINUED)		
39	ADASHI will make the job of the incident commander tremendously easier throughout the incident especially at the start. It takes the tremendous amount of information and confusion that the incident commander faces at the start of the incident and organizes it into a step by step system of information and logistical information that the incident commander can follow to not only get the job done but resume and maintain order at the same time my administering well timed informed decisions all thanks to the information provided by ADASHI.	As mentioned before I would like to see a decon solution recommendation and approximate quantity required for the number of victims that ADASHI predicts and the agent that ADASHI believes was released. You might want to have the decon solution of choice not displayed until the system is at least 75% sure of the agent involved but I think it would help to have that displayed. Also it would be great if the asset tracking part could interface with other firefighting inventory and report software systems such as Firehouse Software. This way it could be used to update the materials used during the incident in these programs that track the department's supplies. Finally it would be great if the program could recognize specific addresses/occupancies and any hazardous materials that are know to be in those occupancies for reference in case of release. That way you can predict if any of the chemicals on scene may be reacting with the agent or if any on-site hazmat could be released if an ordinance explosion occurred in the facility.
40	like I said up to date and timely information helps in the decision process. With this program when info is gathered it can be put into this program and within this a decision can be agreed upon.	I can't think of anything else except that I hope that in the future that it is expanded to outside events also.
41	Consist approach to event. Good resource management. If accurate would be able to predict outcome of patient volumes. Easy method to narrow down probability of agent involved in release.	Would have to trial product and allow others to look at before giving answer.
42	Yes - it provides reference materials and good decision support tools.	
43	good references and computer aided to help us make decisions	
44		Would like to see PPE selection software and also site characterization with regard to spread of contamination.
45		Integration with local day/night population databases would be useful. Ability to take output from local fixed environmental monitors
46	Information management. The information overload that the incident commander will experience will be great. This product will help interpret and summarize important info.	Remote monitoring of the site using civilian technologies rather than JWARN. Integrate GIS data to improve understanding of areas effected.
47	Absolutely. The time that it takes to digest and sift through all our current information is drastically reduced with this tool.	I would like to see an explosive aspect added in the future - possibly with coordination to building structures to assist fire hazmat teams in decision making.
48	I have not seen another program like this that really helps you identify the nature of the problem and then provides casualty estimates and resource requirements based upon population.	Capability to address concentrations/affects in adjoining rooms within a single building and the ability to address outdoor releases would be helpful. I think the ability to produce a near real time concentration map or chart would be helpful.



5. If you chose OTHER for the INDOOR model please explain.		If you chose OTHER for the OUTDOOR model please explain.	
1	Obviously cost will be an important factor. Absent that factor having Chem/Bio incident simulations imbedded a Chem/Bio info database would be helpful.		
2	MARPLOT Aloha Fire Dex RSAC5		
3			Safer
4	I am not familiar with Indevap but feel both chemical and biological monitoring are necessary.		CAMEO/ Marplot/ Aloha most definitely. I am unfamiliar with the others
5			CATS/JACE
6			NARAC plume modeling (from Lawrence Livermore National Laboratories) I'm unfamiliar with D2PC/VLSTRACK/HPAC
7			weather systems for air dispersion modeling..... we for example use the weather pak 400.
8			CATS-JACE (SAIC through DTRA)

10. If there are others that are not listed please list them in the comments block. (This listing is from the Proposed Test Concentrations for NIOSH CBRN APR Certification.)	
1	Please include radiological
2	Ethylene oxide gasoline
3	Biological agents
4	TIC's other organo phosphates.
5	See the ITF40 list.
6	DOT Top 10 Chemicals in Transit

11. Do you believe "dual use" detection is useful for monitoring TICs and CWAs? (This would ensure that one set of equipment is adequate to detect both types of hazards.) Please provide comments.	
1	yes More data is better
2	no Unless the technology dramatically improves and the cost of TIC's comes down the ability of most organizations to purchase an all-in-one unit will be difficult. In addition the severe use of TIC's coupled with monitoring capability doesn't make sense to me.
3	yes
4	yes
5	yes dual or multiple use detection is far and away the best route to go provided accuracy of either is not compromised.
6	yes
7	yes
8	yes Absolutely essential as no technology currently available for on-scene use is foolproof. Redundancy is critical in this arena to determining a level of confidence that the course of action chosen is based on best available and accurate information.
9	yes
10	yes I believe the newer technologies make this more practical.

11. Do you believe "dual use" detection is useful for monitoring TICs and CWAs? (This would ensure that one set of equipment is adequate to detect both types of hazards.) Please provide comments.  
(Continued)

11	yes	Dual use detection equipment is great in that it does not require the entry teams to carry multiple equipment which reduces the stress and possible mis-monitoring that can happen when your hands are full of gear!
12	yes	I think the potential for a terrorist to use readily found products is as high if not higher than their using military grade CB agents.
13	yes	yes dual use is helpful if false positives could be minimized. It would provide a more useful tool.
14	yes	dual use detection capabilities ensures responder confidence in use of detection instruments under stressful situations. If the same detection equipment is used on a daily basis for low consequence/high probability incidents it will be operated properly during a high consequence/low probability incident. This also maximizes training of responders and financial resources.
15	yes	The less time it takes to receive information and the less equipment needed to get your information the quicker a commander can make the decisions needed
16	yes	
17	yes	
18	yes	
19	yes	Depends how expensive this gets and what maintenance is required. Somehow costs need to be factored into this.
20	yes	
21	yes	I believe this is useful...but the cost of upkeep and maintenance on those monitors would be extreme!
22	yes	
23	yes	equipment that has a dual use capability is always useful. not sure how the technology would support this.
24	yes	Anytime you can reduce the number of monitoring devices needed to be carried in it is helpful.
25	yes	
26	yes	As long as there is duplication in case of monitor malfunction.
27	yes	Backup in case one system goes down
28	no	dual use can sometimes provide false interpretation if product is not positively ID'd. Single sue may provide capability for more positive detection and more sensitivity.
29	yes	Yes to a degree. There are incidents in which you need to rule out both TIC's and CWA's to help ensure nothing gets missed. Generally instruments that are dual use tend to have more things go wrong with them. Jack of all trades master of none
30	yes	CWA's are specialized classifications of TIC but utilize similar functionality
31	yes	
32	yes	Redundancy and options are always a good thing.
33	yes	If you allow detection units to identify both types of hazards you reduce the detection equipment that must be carried and thus open the hands of the technicians for other equipment that may be required. Also you simplify operations by only needing to mess with one set of detection equipment.
34	yes	
35	yes	SOPS state that more than one way of monitoring is to be used in any HAZMAT/WMD incident but if equipment is available to do so it would be a great BENEFIT.
36	yes	Consistency of tools makes it easier for training and deployment. A CWA can be present in a TIC. By using separate assessment tools one might miss the intentional release of a CWA within a TIC release. As more Hazmat calls are done than CWA calls using the same assessment tool will make the CWA call go much easier due to operator familiarity with the tool.
37	yes	
38	yes	

11. Do you believe "dual use" detection is useful for monitoring TICs and CWAs? (This would ensure that one set of equipment is adequate to detect both types of hazards.) Please provide comments.  
(Continued)

39	yes	
40	yes	TIC's can be encountered daily hopefully the CBRN event is a once in a lifetime event. If detection systems are not useful on a frequent basis responders will not be able to maintain competency using them.
41	yes	Adding dual use chemicals and precursor's to CWA's is extremely important. That is another database that could be included off of the sampling one - a list of known chemicals in the area and what CWA's or TIC's could be products of those base chemicals...and possibly what amounts of end product from the amounts of starter chemicals.
42	yes	Dual use equipment makes it easier on the end user in the long run.

12. In the effort to move toward dual-use assessment for conventional HAZMAT as well as CBR terrorism events the ADASHI Palm Pilot Field Demonstration will wirelessly and remotely link detection systems (fixed site) and recon teams (Palm Pilot inputs). This will relay information real-time back to the EOC. We are attempting to integrate manual detectors like the M8 M9 M256 and Draeger tubes with instrumental detectors such as the APD 2000 BAWs ACADA TVA1000B (FID/PID) and IR (SaphIRe). Are there other detectors that you would like to see in the Field Demonstration?

1	How about the Draeger CMS device?
2	hand held radiation monitors
3	PIDs and FIDs (RAE Systems)
4	HAZMATCAD HAZMATCAD PLUS ION SCIENCE PHOCHECK 5000 EX PID w/ WMD Module
5	Travler IR by Sensor
6	SAW MiniCAD
7	HazMatCAD Smart Strip RAE PID standard 'four gas' meter (O2/LEL/CO/H2S) AP2C Alpha/Beta/Gamma/Neutron detector Isotope identifier SABRE 2000 (explosives + Chem) Iontrac (explosives)
8	SAW instruments such as Microsensor's SAW minicad hazmat cad and BAE's JCAD. What about the availability of spectral data for the military chem agents for the IR instruments like the sapphire?? currently this data is not available for responders.
9	CAM ppBRAE miniRAE 2000 MIDAC Radiation monitors (Ludlum 14C)
10	Once again radiological meters and PIDs and O2 detectors ( basics for response)
11	RAE line of products
12	ICAM GID 24/7
13	MultiRae meters
14	Industrial Scientific multi-gas
15	none at this time
16	MiniRae 2000 (PID) Various Radiological detection equipment (Ludlum Exploranium) SensIR TravellIR HCl (IR)
17	Hapsite; SAW type detectors (like JCAD)
18	Just ICAM. I believe from what I use as a member of our haz-mat team and from what I've seen on other haz-mat teams the collection of devices and manual detectors you have chosen completely encompasses what is used other than maybe the ICAM.
19	hapsite. travel IR Also will this just be palm based or pocket pc as well.
20	Mini-Rae
21	RAID-M
22	ChemPro Hapsite MultiRae DRae SensIR HAZMATID
23	CAM new generation military detectors Hapsite
24	Chem JCAD Bio Particle Counters FTIR Rad Survey instruments and dosimetry.
25	that should be sufficient.

13. Are there features/functions that you would like to see incorporated into ADASHI? (Please explain.)	
1	yes PDA data in/out GIS Remote access
2	Unit GIS location
3	no
4	no
5	no
6	no
7	no
8	yes Primarily an integration into CAMEO/ALOHA/MARPLOT.
9	yes As I said up front if you can put the basic of a site safety plan into it like team assignments reporting additional agencies on scene etc it would help!
10	no
11	yes analysis of detector readings similar to the confidence level indicated with symptoms/observations.
12	yes availability of linking multiple site locations i.e.. hospitals train stations if multiple incident sites are being handled as part of the same incident. Incident commanders could communicate progress between locations and reallocate resources if needed.
13	yes Automatic recording of data and datalogging for reports
14	yes none that I can think of right now
15	no
16	yes I believe you have most of my needs covered. Key alerts in alarm or light would assist planners of IDLH conditions for responders for planners to alert personnel. Good job!!!!!!!!!!!!!!
17	yes Is there a way of doing any reverse engineering in the model? For example I already know I have casualties out to 500 yards and given certain weather perimeters can the system reverse engineer this and tell me what I may be dealing with based on the symptoms I am seeing? Can it then reverse estimate quantities? While I know a lot of models like inputs like quantities released room sizes etc. the only way to get this is to send someone in. That takes time and poses a risk exposure. When I get to the site I can see the victims and some kind of reverse engineered system would be great.
18	no
19	yes Make it do everything imaginable. I know this is nearly impossible and unrealistic but you asked!
20	yes
21	yes the capability to be able to recall all data for reporting purposes. It would be useful to be able to print an overall report after the incident.
22	no
23	yes census data on populations ability to create population areas ability to create medical facilities with levels of care
24	no
25	yes Estimation of amount of decon wastewater produced per hour to facilitate logistics regarding holding/transportation of wastewater.
26	yes
27	no comment at this time not familiar enough with all of it...
28	no
29	no
30	yes Grid map related link to our phantom box area maps with digital camera capability
31	yes Link to CAMEO/ALOHA/MARPLOT Suite. Ability to link to a variety of GIS platforms and CAD systems.

13. Are there features/functions that you would like to see incorporated into ADASHI? (Please explain.)  
(Continued)

32	yes	Places on certain pages especially the command status screen to type in notes. Also it would be great if the system could accept information from a portable weather station on the scene that is connected to the computer and automatically fill in the weather information in the first screens. Would also like the ability for laptops with IR transmitters to be able to send data updates to other computers with IR transmitters. That way as other units/agencies arrived you could share your information with them by clicking one button and letting the laptops download.
33	yes	pocket pc based.
34	no	
35	yes	If a live demo could be performed my team would probably have suggestions. A computer generated demo is limited in it's use but it does show its potential.
36	no	
37		cant think of any
38	yes	A PPE wizard that provides Protection Factors.
39	yes	I would like to practice with ADASHI BEFORE comment
40	yes	Integrate decontamination and medical treatment triage cues for responders making those decisions.
41	yes	chemical precursor database as stated in question #10.
42	yes	Capability to address concentrations/affects in adjoining rooms within a single building and the ability to address outdoor releases would be helpful. I think the ability to produce a near real time concentration map or chart would be helpful.

14. How would you envision a status (real-time situational awareness) screen that would keep you the user up-to-date on the event-tracking key response function over time and space?

1	Auto refreshing with most recent changes highlighted.
2	Simple screen with all vital information readily available in a large size font that can be viewed from a distance. The information would be non-cluttered and easily reviewable at a moments notice.
3	automatic pop ups or flashing keys to remind the IC.
4	set up Alarm for update condition
5	Similar to your screen 184 of the demo program
6	A brief screen listing critical info in a list format.
7	It would have to be a merging of data on some of the screens. This would have to be determined by each individual and may prove very difficult to integrate.
8	YES Absolutely with on screen monitoring of elapsed time casualties etc. Also alarms that would notify the IC if plume models are exceeded if weather changes.
9	elapsed time responder time- stressors time on air (scba) dose/time status other parameters resource tracking
10	Real time computer hook up so that the info from the scene is transmitted live as it is inputted.
11	Besides the event clock an estimate of current concentration of agent on default screen.
12	Rolling alerts to prompt action/input with adjacent plotting of events
13	difficult to envision - every emergency is different. if time is assigned an incident commander may compromise operations to stay within the time limits being suggested by the software. track key events log the time of completion
14	roll over screen that keeps updating as new info becomes available.
15	Time log checklist indicating current conditions plume or spread within a building water resources and spread of contamination air monitoring status plume operations tasks status resources used( link) communications outreach injuries and deaths sites for medical care evacuation decon facilities size of hot zone media update information and time of report ppe of responders care givers ppe responder injuries and illness and no doubt more I can't think of
16	This helps the command system track progress and evaluate the need to modify any operational plans.

	14. How would you envision a status (real-time situational awareness) screen that would keep you the user up-to-date on the event-tracking key response function over time and space? (Continued)
17	I would think that it would need to be a split screen to show what is currently happening and draw the picture as the incident develops.
18	Look at a consensus Tactical Worksheet for Incident Commanders and duplicate the majority of the appropriate information. Color code different areas to allow for quick recognition and location on the screen. Add audible signals to identify benchmarks that are met or need to be addressed.
19	The current model looks pretty good. If you incorporate predictions on decon wastewater medical transports required etc. it would be nice to have a logistics display showing anticipated vs. actual assets. For example you could enter the number of ambulances on scene (figure two patients per ambulance) and adjust as units come and go and have that compared to predicted casualties over time.
20	one condensed screen showing up to date information from many of the various screens
21	screen plot with some calculated data regarding agent cloud location & chemical concentration estimates key population concerns ( homes medical facilities industrial sites waterways. areas of refuge transportation routes.
22	one that is easy to read
23	I think you covered it all. The Incident Commander screen is good. If you were to add anything else do it in the form of a link similar to Asset Management. -Possible access to a pre-fire program in which we can pull down specific information on that particular facility.
24	Graphical (GIS) type display that would indicate personnel location limitations of zones plumes etc...
25	plot grid with sweep bar similar to weather Doppler screen
26	Current IC screen looks good. It would be interesting if the status screen could also be viewed simultaneously off-site such as at an EOC.
27	Concentration predictions currently input weather conditions believed agent released number of victims in medical transported and/or decontaminated and how many are left for each area to type notes everything else just like what you have already
28	Would change in real time as situation changes.
29	useful to have horizontal and vertical down wind hazard plots..
30	Graphics and colors very important. Items needing attention need to be clearly indicated
31	as a click button tool that would only pop-up when called upon not one that stays on screen for long periods of time.
32	Perhaps a simple bar graph much like your CONFIDENCE bar could be utilized for each key response function. If a function is not being performed it could Go Red to indicate that it is either being overlooked or is not receiving correct input of data. Direct access to the data would also be helpful - How many Immediate casualties have been deconed at +30 minutes?

	15. How would you like to see the information input formatted for your particular Responder area? (e.g. Dispatcher/911 automated entry)
1	As needed with user able to update based on access level.
2	the screen format seems ok
3	Dispatcher/911 automated entry
4	Compatible with most languages
5	On scene especially with hand held devices.
6	not necessary but it could be a plus. would prefer to have the option of responder entry as our dispatch is a separate agency.
7	I would like to see a 911 Automated entry made this could be printed off and provided to the responding team.
8	I think you are asking whether for field use or 911 center use. Would prefer it be set for field responder input. Don't think our 911 center would ever have enough people to utilize this tool in the event of the real thing.

15. How would you like to see the information input formatted for your particular Responder area? (e.g. Dispatcher/911 automated entry) (Continued)	
9	dispatchers could input data very easily into the current format based upon 911 call information. ADASHI could be utilized to reinforce the awareness level skills of 911 call takers and dispatchers.. They would really only need the first few screens facility information victim information signs/symptoms. Providing them more than that would give them the ability to try to manage an incident remote from the incident site. Suggest a special abbreviated version for dispatchers and 911 call takers to support awareness level skills speeding recognition of an NBC incident.
10	Voice activated entry for responders that are suited up and in the hot zone.
11	what information the dispatcher can get and enter would be wonderful for a heads-up on the incident
12	Dispatcher is the key but a specialized data entry person with adequate training in necessary in addition to the dispatcher as during such an even routine activities may also overwhelm dispatchers. Initially a dispatcher can be utilized but a Specialist is to be on cal for prompt arrival as the incident grows.
13	In whatever manner is it done it must have the capability of being easily shared among command points such as an EOC and field CP.
14	In our area we will have to manually enter the information on scene.
15	Multi-level compatibility. CAD-Software interface at dispatch center which is wirelessly and LAN interfaced with EOC field units and MCP. All units receive real-time updated information as it is inputted by other responders.
16	Dispatcher/911 automated entry is fine.
17	You might consider how to integrate the information flow into a military C2 environment.
18	Do you mean like a Computer Aided Dispatch System? Okay.
19	User entry
20	Input by the incident commander or his designee is probably the most reliable accurate means.
21	Be able to either access through internet or email to 911/EOC
22	911 automated entry
23	I belong to a Fire Dept. Hazmat Team. I would like to see information in parts per million (ppm) not mg/m3. Farenheight vs. Celsius etc.
24	program manager not any other way.
25	Really depends on what CAD system is being used.
26	Some pre-planned information for specific addresses/occupancies that is pulled up automatically when you select them from a list; on scene information input as the information dispatch gets may be of questionable reliability
27	Automated
28	Since people that might not extremely familiar with WMD issues the use of drop down boxes or checklists will be very important.
29	Automated entry would be nice but it is not going to work in all of our jurisdictions right now due to a lack of wireless links. The use of pull-down item selections makes manual entry pretty simple.

16. Please look at the last 5 screen captures from the Survey Pictures link for the various detector algorithms. How would you as the user want to see the screen? If different please explain (Please reference the title of the screen).	
Comments	
1	See my previous comments on each slide.
2	A brief description for some terms such as miosis on screen 1
3	Again key in the number of minutes hours etc for record of occurrence # 2 not available for viewing #4 Much better please add (F in addition to C for degrees for first responders) #5 Timeline as to real-time and current time of information
4	Define tech terms on the screen i.e. Miosis The ERG has such a limited window for use I wonder if really needs to be in here. The book may be easier to use.

16. Please look at the last 5 screen captures from the Survey Pictures link for the various detector algorithms. How would you as the user want to see the screen? If different please explain (Please reference the title of the screen). (Continued)

Comments

5 List the chemical name selected on the top of the ERG page.

6 Enlarge the font. Remember many Incident Commanders have aging eye sight.

7 Inside hazard: Allow for input of temperature in Fahrenheit Casualties: Indicate what pharmaceuticals

8 Add decon solution recommended and about how much will be needed to casualty screen

9 Signs and symptoms - use a graphical person to indicate where the signs and symptoms would be expected to be found. Many of the values important to calculation are not available to responders these values shown only lend to confusion they could be transparent to the user. (eg. ACH value)



## APPENDIX C

### "HIGHLIGHTS" FROM THE ADASHI SURVEY RESULTS

1. (a) What are your current on-hand hazard analysis and decision support capabilities?

- EIS GEM
- CAMEO
- COBRA
- ALOHA
- HPAC
- CATS
- OREIS
- MARPLOT
- NIOSH Guide

\*Should one be chosen?

There could be problems with conflicts of interest.

Innovation may be "stifled" due to down selection.

The user can install what they want into ADASHI; ADASHI will default to that system (e.g. ALOHA, HPAC).

Should focus on creating a one-plume modeling system that is consistent. Sometimes when two people use the same system, they can end up with different plumes due to user errors.

ADASHI should be plug'n'play ready with different devices (e.g. HPAC, COBRA).

Interoperability is a very important issue.

Seamless integration is necessary for ADASHI to be truly useful.

(b) Do you think that you have the tools to respond to a CBRN threat?

- 43.5% yes
- 56.5% no

Tools may not be defined well enough in this question (physical or intellectual)?

Many first responders do not know that they need more than what they currently have. Not everyone knows where the assets are located—who has them and can distribute them?

Some of the first responders do not know how and when to use their equipment.

The "no" responses would have probably been higher if the survey had been more widely distributed.

Some of the first responders may not be thinking beyond what they are used to dealing with. A firefighter may not be thinking about WMD.

(c) Is your HAZMAT training up-to-date?

- 77.8% yes
- 22.2% no

This training may probably just be the certification level of training-nothing more extensive.

HAZMAT training related to CBRN/WMD response should have been included as a qualifier in this question.

(d) What are your biggest hazard analysis and decision support needs?

- Able to process a lot of information in little time
- Computer simulation
- Early identification
- Rapid information dissemination
- Rapid detection
- Integrated equipment for complete picture of incident
- Simple system/easy to use
- Real-time information

Integration of the real-world data into the model is a key issue.

This real-world data will aid in developing the integrated system (detection/ID).

Once the data is obtained, what needs to be done with it? Why/what do you need to know?

- Level of hazard
- Risk/rescue factor

Do measurements need to still be taken after initial rescue efforts?

- Tracking of the hazard needs to be done (containment issues)
- How should protective equipment be used after exposure? Should fresh air be used, HVAC be turned back on...?
- Wireless component would be helpful to take into the area to know the current situation
- Communication options should be provided (i.e. PDAs, cell phones, PDA cell phones). The system is currently based on radio use. Good wireless communication is currently lacking. At this time when a robot is sent in for recon (wired), problems arise from the wire.
- Compilation and collation of the data into a database relies heavily on clear communication.

Information over time and space is the type of information that needs to be obtained. Internet-based communication is critical to incorporate into ADASHI.

2. Look at the 5 screen captures...how would you as the user want to see the screen?

Site-specific information

- HVAC
- ACH-air changes per hour
- Fahrenheit instead of Celsius

Humidity will vary indoors over the seasons. Would like to see a humidity level. Building "granularity" into the model would be helpful.

In major cities, vulnerability and risk analysis will be done. This data includes structure of the building as well as who will be using the building when with how many people attending the event. That critical data could be made available. It would be necessary to input that data into the model.

Elevator shaft? Stairwell? The screen addresses a room not a building-a room of response may be a stairwell (a route of egress).

Ventilation...breaking windows/do not break windows...?

It would be nice to be able to scan blueprints (parameters) into ADASHI.

Would like to integrate a heat index calculator.

#### Signs and Symptoms observed

- Quick summary
- There are a lot of screens for what may be little time
- Would like to see layman's terms

Data could be coming from a dispatcher, or responders who are first on the scene.

What systems are involved, and what is the time frame?

There are some advantages to having the greater amount of data.

Should try to provide two choices- 1) What do I do now (Quick assessment)? 2) What are some of the more intricate details (Thorough assessment)?

Maybe have this be ICON-driven.

#### IC Status Screen

- Clarify the wind direction
- Meteorological conditions
- Title that states "IC Screen"

#### Database for Asset Tracking

- Track equipment other than decon equipment
- Need to be able to put local assets into the database
- Running log of supplies used
- Who maintains the updates to the database?

Radio-tagging equipment is inexpensive, but the detection equipment for the tags is expensive.

ADASHI developers are updating the database for NIOSH and NIST. This will include both civilian and military equipment.

Bar coding would be helpful.

Universal database is built, and then ADASHI will ask the user what they have. This will become the individual/personalized asset list. (Use National Stock numbers.)

USMC is using the MAXIMO database.

#### Number of Casualties Over Time

- Reorder the blocks for real-time priority
- Do extreme weather conditions factor into the decon level?

Decon corridors would correspond to the real-time blocks.

Should be able to adjust the triage categories in real-time during the response.

You need to have a secondary screen for the "immediate" to be able to assess the resources needed and available.

Neurological damage, hemorrhaging, pediatrics, and respiratory are the four major medical concerns.

Toxicology profile would also be helpful based on age, and other medical predispositions.

Would want to be capable of downloading the JRCAB database; this would give a ready estimate of supplies needed.

For any numbers entered into the RED box, a screen asking for further information should pop up.

This is a population-based exercise for the IC.

3. (a) Will the ADASHI tool give added value to your current capabilities? Please explain...

- Only one person said "no" with no explanation (There was no contact information for this respondent. The other responses for this respondent were scattered; this may have been a practice run with the survey.)
- Wonderful amount of information in a compact package
- Casualty estimation is helpful
- Determines the safety of the building
- Asset inventory tracking
- Decon/patient tracking
- Great for training
- Good for debriefing

ADASHI has great potential as a training tool. ADASHI will also serve as the framework for other tools.

(b) What features/functions would you like to see incorporated into ADASHI?

- Outdoor releases
- CAMEO
- Post additional maps/charts
- Store data of changing events
- PPE selection
- Explosives

Explosive fragmentation is a concern.

There are commonly used algorithms for explosives.

There is a lot of data available regarding explosives that could either be added onto or incorporated into ADASHI.

ECBC will add the inhalation piece to the database; skin protection will be taken care of by NATICK.

4. (a) Are the following applications important to your requirements?

	Yes	No	Total Responses
Training	47	1	48
Responding	47	1	48
Planning	48	0	48

(b) Does it have use as a tool for the following?

	Yes	No	Total Responses
Training	47	1	48
Responding	46	1	47
Planning	48	0	48

(c) Is the application useful in its present/anticipated form?

	Yes	No	Total Responses
Training	46	2	48
Responding	42	5	47
Planning	47	1	48

5. Indoor/Outdoor Models

-There were varied comments. Several of the participants did say, however, that they were unfamiliar with models other than what they use.

INDOOR	Include This Model	Use Now	Would Like	Total Responses
Chem INDEVAP	39	7	23	48
Bio INDEVAP	39	6	22	47
EPA Risk Model	31	10	20	37
Other	1	1	1	3

OUTDOOR	Include This Model	Use Now	Would Like	Total Responses
D2PC	23	5	20	34
VLSTRAK	25	3	18	34
HPAC	23	8	17	33
Cameo/Aloha	29	32	8	44
ERG 2000	32	27	9	44
Other	6	3	1	7

6. Do you want a tutoring capability in ADASHI for the following?

- Terms/Definitions
  - 95.7% yes
  - 4.3% no
- Key Functions/Options

	Yes	No	Total Responses
Decon	46	2	48
PPE	45	3	48
Detection/Monitoring	47	1	48
Medical Treatment	46	1	47
Hazard Mitigation	44	3	47

7. (a) Do you want ADASHI to suggest operational alternatives?

- 97.8% yes
- 2.2% no

(b) If YES, please choose the alternative(s) you would like to have.

- Shelter in Place vs. Evacuation-95.7%
- PPE Downgrading-93.5%
- DECON Support for Healthcare Facilities-93.5%
- INDOOR/OUTDOOR Models Used-93.5%

Evacuation may be difficult to address.

PPE downgrading is a critical alternative.

8. (a) Please rate the usefulness of ADASHI in the following areas from 1-5.

	Not Useful (1)	(2)	(3)	(4)	Very Useful (5)	Response Average
Realistic Hazard Area Plotting	0	2	4	9	33	4.52
ERG Hazard Area Plotting	0	1	9	17	20	4.19
Signs and Symptoms Algorithm	0	0	6	12	30	4.50
Personnel Location Map	1	1	9	18	19	4.10
Protective Equipment Database	0	2	14	17	15	3.94
Treatment Database	0	0	8	19	21	4.27
Status Checklists	0	1	5	12	30	4.48
Sampling and Intel Algorithms	0	0	10	19	19	4.19
Decontamination Equipment Usage	0	3	10	20	15	3.98
Indoor Hazard Area Plotting	0	1	2	20	25	4.44
Emergency Response Guide	0	3	18	14	13	3.77
Casualty Prediction	0	0	9	9	30	4.44

The ERG's usefulness was rated at about a 3, why? Is it because it's a more general tool?

(b) We have realistic hazard area plotting; with regard to range of models and GIS maps would you like to see a dual graphical map overlay/display?

100% yes

9. (a) Would you like to see ERG2000 enhanced to provide automatic calculation of isolation and exclusion areas?

- Only 1 said "no"

(b) Would you like to see the plot on a GIS grid map?

- 100% yes

10. Do you think that it is important to predict the distribution of hazards?

- 93.6% yes
- 6.4% no

11. Do you believe "dual use" detection is useful for monitoring TICs and CWAs?

- Only 2 people said "no"
- Dual use lightens the load and lessens time to retrieve data
- False-positives are reduced
- Reduces stress on responder

12. In the effort to move toward dual-use assessment...Are there other detectors that you would like to see in the Field Demonstration?

- RAE products
- Hapsite
- Travel IR

13. Are there features/functions that you would like to see incorporated into ADASHI? (Please explain.)

- 64.1% yes
- 35.9% no
- GIS
- Data recording
- CAMEO/ALOHA/MARPLOT
- Link multiple sites
- Reverse engineering/data
- Census data on populations
- Integrate decon and medical triage cues
- Address concentrations/affects in adjoining rooms
- Outdoor releases

Which TICs/CWAs are you concerned with? If there are others that are not listed, please list them in the comments block. (This listing is from the Proposed Test Concentrations for NIOSH CBRN APR Certification.)	Respondents indicating concern:
<b>NERVE</b>	
• G	41/42
• VX	41/42
<b>BLISTER</b>	
• Sulfur Mustard	37/40
• Nitrogen Mustard	32/40
• Lewisite	38/40
• Phosgene Oxime	33/40
<b>BLOOD</b>	
• Cyanogen Chloride	33/39
• Hydrogen Cyanide	38/39
<b>CHOKING</b>	
• Phosgene	36/43
• Chlorine	41/43
<b>BASE GAS</b>	
• Ammonia	39/39
<b>ACID GAS</b>	
• Hydrogen Chloride	39/39
<b>OTHER</b>	
• Cyclohexane	19/37
• Hydrogen Sulfide	37/37
• Sulfur Dioxide	28/37
• Phosphine	25/37
• Nitric Dioxide	21/37
• Formaldehyde	24/37
• Arsine	23/37
<b>Comments:</b>	
Radiological	
Ethylene oxide & gasoline	
Biological agents	
TIC's and other organo phosphates	
See the ITF40 list	
DOT Top 10 Chemicals in Transit	



Population data as a function of time (seasonal, events, time of day) would be nice to have. Hospital locations, or other trauma units that could lend resources in a database would be very helpful.

14. How would you envision a status screen...over time and space?

- Larger views
- Simple uncluttered screen
- Visual updates
- Elapsed time (event clock)
- Current conditions and status
- Audible alerts
- Sweep bar/grid like a Doppler screen (e.g. changes in wind direction)

Where should the incident site be set up?

Should the site be moved due to thermal changes or changes in wind directions?

SODAR (not SONAR) could be used-layers/levels of winds could be useful. These can be deployed at the site. Can it be integrated into ADASHI?

15. How would you like to see the information input formatted for your Responder area?

- Dispatcher/911 entry for field use
- Would like to see ppm instead of  $\text{mg}/\text{m}^3$
- Fahrenheit instead of Celsius

16. Please look at the 5 screen captures...How would you as the user want to see the screen?

- Over 90% said that they would like to see the screens the "same"
- Define the terms in Layman's terms
- Fahrenheit
- ACH

Voice recognition systems could be used instead of typing in data.

17. This question asked for contact information from the participants. This information will not be included in this report.

#### General Comments from the ADASHI BRP

There needs to be an overall/overarching integration of all of the systems with ADASHI available now. There needs to be a sponsor for this program.

This should be run as an ACTD (funding through Joint Funding Office). This could be helpful in getting an initial version of ADASHI released. The process is initiated by ADASHI being identified as a Commander requirement. ADASHI is the most highly developed Consequence Management tool to date.

Once ADASHI is integrated, it will become part of the Joint Program Office. There would have to be a program manager. ADASHI satisfies requirements for both DoD and Homeland Defense; it could go on a parallel track.

Better granularity will be obtained through the integration of operational scenarios and physiology data. Need to develop better granularity for work/rest cycles and rescue cycles; data for this can be obtained from physical fitness tests.

The ICs should be the ones that take the risks when making the decisions; they are the experts and their judgments should be trusted.

\*The comments in BLUE are from the BRP.